

Amendments to the Specification

Please delete the heading “DESCRIPTION” on page 1, line 1.

Please add the following heading after the title of the invention on page 1, line 2:

Background of the Invention

Please replace the paragraph beginning on page 1, line 4 through line 9, which starts with “The present invention relates to” with the following rewritten paragraph:

The present invention relates to a rear arm for a motorcycle for supporting a rear wheel so as to swing in the vertical direction freely with respect to a body frame, and in particular, to a rear arm that makes it possible to realize the reduction in weight and the reduction in manufacturing cost while securing high rigidity.

Please replace the paragraphs beginning on page 1, line 11 through page 2, line 5, which start with “As a rear arm for” with the following rewritten paragraphs:

As a rear arm for a motorcycle, conventionally, for example, there is one obtained by bringing divided surfaces of left and right member sections, which are divided in the middle of a cross member, of a cast-molded body made of light alloy, in which the left and right member sections are formed integrally with left and right arm sections, respectively, into abutment against each other (~~see JP A 62-122887~~).

Incidentally, in a motorcycle, it is important to make a the rear arm light in weight and rigid from the viewpoint of improving driving stability, and the conventional rear arm manufactured by weld-bonding a molded body made of light alloy can meet such a demand to some extent.

However, recently, a rear arm, which is lighter in weight and more rigid and makes it possible to further realize reduction in manufacturing cost, has been demanded. It is an ~~object~~ advantage of the invention to provide a rear arm for a motorcycle that can meet such a recent demand.

Please replace the heading on page 2, line 6 with following rewritten heading:

~~Disclosure~~ Summary of the Invention

Please replace the paragraphs beginning on page 2, line 7 through page 5, line 9, which start with "An invention of claim 1" with the following rewritten paragraphs:

~~An invention of claim 1 is a~~ A rear arm for a motorcycle including: includes left and right arm portions; pivot sections of a closed sectional shape that bond front ends of the left and the right arm sections to each other; and cross member sections of a closed sectional shape that bond ~~the pivot sections of the left and the right arm sections and a section between rear wheel front edges~~ sections between the pivot sections and rear wheel front edges of the left and the right arm sections to each other; The ~~the~~ pivot sections ~~being~~ are pivotally supported by a body frame so as to swing freely in the vertical direction; ~~and the~~ The rear wheel ~~being~~ are axially supported between rear ends of the left and the right arm sections; ~~characterized in that the~~ The rear arm consists of left and right arm molded bodies made of aluminum alloy die-cast, which are formed by dividing the pivot sections and the cross member sections into left and right parts along a body central line, and obtained by weld-bonding the left and the right arm molded bodies in the pivot sections and the cross member sections; ~~the~~ The left and the right arm sections are formed in substantially a triangular shape viewed from sides of the motorcycle in side view and formed in substantially a C shape opening toward the inner side in a width direction of the ~~vehiele motorcycle in cross-sectional view~~ viewed from the rear of the motorcycle in cross section, and the cross member sections are formed in a ~~closed sectional shape extending from vertexes to bases of the triangular shapes~~ vertically long closed sectional shape and have rear vertical walls of an arc shape extending along a front edge of the rear wheel viewed from sides of the motorcycle.

~~An invention of claim 2 is a rear arm for a motorcycle according to claim 1, characterized in that the~~ The cross member sections have rear vertical walls of an arc shape extending along the front edge of the rear wheel viewed from the sides of the motorcycle and front vertical walls that are formed such that lengthwise spaces between the front vertical walls and the rear vertical walls are minimized in intermediate parts in the vertical direction and are widened toward upper or lower parts thereof.

~~An invention of claim 3 is a rear arm for a motorcycle according to claim 1 or 2, characterized in that one~~ One of the left and the right cross member sections is fit and inserted

into the other of the left and the right cross member sections, and the fit and inserted part is welded.

~~An invention of claim 4 is a rear arm for a motorcycle according to any one of claims 1 to 3, characterized in that a~~ A support boss section, to which a link member of a rear wheel suspension system is coupled, is integrally formed on bottom surfaces of the cross member sections, and the support boss section is constituted by bringing integrally formed left and right boss sections into abutment against opposed surfaces of the left and the right cross member sections and weld-bonding the left and the right boss sections to each other.

~~An invention of claim 5 is a rear arm for a motorcycle according to any one of claims 1 to 4, characterized in that the~~ The left and the right arm sections have main arm sections, which constitute the bases of the triangles formed by providing openings at the rear of the cross member sections, and reinforcing arm sections, which constitute the hypotenuses of the triangle; ~~and reinforcing~~ Reinforcing plates are bonded to the left and the right arm sections at least in parts at the rear of the cross member sections of the main arm sections so as to close the openings of a C shape in cross section.

~~An invention of claim 6 is a rear arm for a motorcycle according to claim 5, characterized in that plural~~ Plural reinforcing ribs crossing one another are integrally formed on sidewalls of a C shape of the left and the right arm sections; ~~dampers.~~ Dampers consisting of an elastic member are locked in crossing parts of the reinforcing ribs, ~~and the~~ so as to cover the reinforcing ribs. ~~The dampers are pressed and intervened by the reinforcing plates nipped in a compressed state by the reinforcing plates and the reinforcing ribs.~~

~~An invention of claim 7 is a rear arm for a motorcycle according to any one of claims 1 to 6, characterized in that the~~ The left and the right arm molded bodies are cast by using die-cast molds having plural molten metal inlets, which are arranged along the bases or the hypotenuses of the triangles of the left and the right arm sections, and molten metal outlets, which are arranged so as to correspond to the molten metal inlets, and supplying molten metal in a direction traversing the triangles.

~~An invention of claim 8 is a rear arm for a motorcycle according to claim 7, characterized in that edges~~ Edges of the openings of a C shape in cross section is set thicker than the other parts; ~~the~~ The molten metal inlets are formed at edges of the openings of the main arm sections

constituting the bases, and the molten metal outlets are formed at edges of the openings of the reinforcing arm sections constituting the hypotenuses.

Please replace the heading on page 6, line 14 with following rewritten heading:

~~Best Mode of Carrying Out~~ Detailed Description of the Invention

Please replace the paragraph beginning on page 7, line 23 through page 8, line 9, which starts with "The left and the right" with the following rewritten paragraph:

The left and the right arm sections 2a and 3a are formed in substantially a triangular shape when the left and the right arm sections 2a and 3a are viewed from ~~sides~~ either side of the vehicle and have openings 2d and 3d of substantially a triangular shape at the rear of the cross member sections 2c and 3c. Therefore, the left and the right arm sections 2a and 3a can also be considered as being formed by integrally forming parts constituting bases of the triangles and parts constituting hypotenuses of the triangles. In this embodiment, the parts constituting the bases are referred to as main arm sections A, and the parts constituting the hypotenuses are referred to as reinforcing arm sections B.

Please replace the paragraph beginning on page 8, line 15 through line 22, which starts with "In addition, the left " with the following rewritten paragraph:

In addition, the left and the right arm sections 2a and ~~3b~~ 3a are formed in substantially a C shape by integrally forming an upper wall 4b and a lower wall 4c at upper and lower edges of a sidewall 4a, which extends in a vertical direction, so as to extend in a lateral direction (inward in the width direction) when the left and the right arm sections 2a and 3a are viewed in a cross section, and openings of the C shape face the inner side of the vehicle.

Please replace the paragraph beginning on page 9, line 5 through line 18, which starts with "Parts at the inner side" with the following rewritten paragraph:

Parts at the inner side in the width direction other than the left and the right arm sections 2a and 3a of the left and the right pivot sections 2b and 3b are formed as cylinders of generally a rounded triangular shape when the parts are viewed in a cross section (see Figs. 4 and 6), and ends on the inner side in the width direction of the left and the right cylinders 2e and 3e are weld-bonded ~~with~~ to each other. More specifically, outer wall parts exposed forward and rear wall

parts facing backward of the ends on the inner side of the cylinders 2e and 3e are welded in a state in which the wall parts are brought into abutment against each other, top wall parts and bottom wall parts are fit and inserted with each other, and a V groove formed along a boundary line b of the fitting part is weld-bonded (see Fig. 7).

Please replace the paragraph beginning on page 9, line 25 through page 10, line 14, which starts with “When the left and the right” with the following rewritten paragraph:

When the left and the right cross member sections 2c and 3c are viewed in a cross section, the left and the right cross member sections 2c and 3c are formed in closed sections of a pentagonal shape elongated in the vertical direction extending from vertexes 2g and 3g of the left and the right arm sections 2a and 3a to bottom surfaces thereof. Rear vertical walls 2h and 3h constituting rear sides of the closed sections are formed in an arc shape along a shape of the front edge 14a of the rear wheel 14. In addition, front vertical walls 2i and 3i constituting front sides of the closed sections are formed such that spaces in the lengthwise direction between the front vertical walls 2i and 3i and the rear vertical walls 2h and 3h are narrowest in the middle of the vertical direction, more specifically, in the vicinity of top surfaces of the main arm sections A and are widened toward upper or lower parts thereof.

Please replace the paragraphs beginning on page 11, line 3 through line 15, which start with “The left and the right” with the following rewritten paragraphs:

The left and the right cross member sections 2c and 3c are bonded by fitting and inserting one of the inner ends thereof into the other and welding the inserted part. More specifically, as shown in Figs. 10 and 11, the rear vertical walls 2h and 3h and the front vertical walls 2i and 3i of the left and the right cross member sections 2c and 3c are formed to be tapered,~~the~~ The right cross member section 3c is fit and inserted into the left cross member section 2c and welded along an outer peripheral boundary line a of the fit and inserted part.

In this way, since the left and the right cross member sections 2c and 3c are formed to be tapered and fit with each other, a mold of a slide type is not required, and the fitting structure can be realized without causing complication of a mold structure.

Please replace the paragraph beginning on page 13, line 2 through line 8, which starts with “In addition, dampers for” with the following rewritten paragraph:

In addition, dampers for vibration proof 25 consisting of an elastic member are disposed in a compressed state between the tuning plates 7 and the reinforcing ribs 5a to 5c. The dampers 25 are locked in crossing parts of the lateral ribs 5a and the vertical ribs 5b or the oblique ribs 5c, whereby the dampers 25 are prevented from moving due to ~~vibration~~ vibrations or the like.

Please replace the paragraph beginning on page 14, line 11 through line 19, which starts with “Further, the left and the right” with the following rewritten paragraph:

Further, the left and the right arm sections 2a and 3a are formed in substantially a triangular shape in a side view, and the cross member sections 2c and 3c are formed in a closed sectional shape extending from the vertexes 2g ~~ad~~ and 3g of the triangular shapes to bases thereof. Thus, since the arm sections of the triangular shapes are further demarcated into two triangles by the cross member sections 2c and 3c to form a truss structure, rigidity of the entire rear arm 15 increases significantly.

Please replace the paragraphs beginning on page 15, line 14 through page 16 line 8, which start with “In this case, as shown” with the following rewritten paragraphs:

In this case, as shown in Figs. 10 and 11, the rear vertical walls 2h and 3h and the front vertical walls 2i and 3i of the left and the right cross member sections 2c and 3c are formed to be tapered; and the right cross member section 3c is fit and inserted into the left cross member section 2c and welded along an outer peripheral boundary line a of the fit and inserted part. Thus, a mold of a slide type can be made unnecessary in die cutting at the time of die cast, and a mold structure is never made complicated.

In addition, as shown in Figs. 7 and 8, top wall parts and bottom wall parts exposed to the outside excluding the rear vertical walls and the front vertical walls of the left and the right cross member sections 2c and 3c form a V groove along an outer peripheral boundary line b of a fit and inserted part formed in a rectangular box shape in opposed ends 2n and 3n of the left and the right cross member sections 2c and 3c. Thus, weld-bonding intensity can be increased. In this case, since the fit and inserted part is opened to the outside, even if the thickness of tips is

increased, a position of a parting line simply changes, and the mold structure is never made complicated.

Please replace the paragraphs beginning on page 17, line 14 through page 19, line 11, which start with "Further, the dampers 25" with the following rewritten paragraphs:

Further, the dampers 25 consisting of an elastic member are intervened in a compressed state between the reinforcing ribs 5a to 5c of the left and the right arm sections 2a and 3a and the reinforcing plates 7. Thus, in particular, propagation of vibration due to chain driving or the like from the rear arm 15 to the body can be controlled, and the occurrence of noise can be controlled.

In this case, the dampers 25 are locked in the crossing parts of the plural reinforcing ribs 5a to 5c, and the dampers 25 are pressed by the tuning plates 7. Thus, the dampers 25 can be positioned surely, and the dampers 25 are prevented from moving due to ~~vibration~~ vibrations or the like without providing a special positioning ~~means~~ device.

In addition, in the case in which the left and the right arm molded bodies 2 and 3 are die-cast, the die-cast molds 26 having the plural molten metal inlets 26a, which are arranged along the main arm sections A of the left and the right arm sections 2a and 3a, and the molten metal outlets 26b, which are arranged in the reinforcing arm sections B so as to correspond to the molten metal inlets 26a, are used to supply molten metal in a direction traversing the triangles, that is, when the rear arm 15 is viewed as a whole, to supply molten metal along the sides of the rear arm 15. Thus, as shown in Fig. 4, the molten metal inlets 26a and the molten metal outlets 26b can be formed over substantially the entire length of the main arm sections A and the reinforcing arm sections B, and a total area of the molten metal inlets and outlets can be secured sufficiently. Therefore, it is possible to make the flow of the molten metal smooth, and the rear arm 15, which is relatively thin and has a complicated shape, can be cast surely. Incidentally, in the case in which, when the rear arm is viewed as a whole, molten metal is supplied in a direction perpendicular to the sides of the rear arm, more specifically, for example, in a direction of arrow C in Fig. 20, since the areas of the molten metal inlets and outlets cannot be increased, there is a limit in making the flow of the molten metal smooth.

In the case in which the molten metal is supplied in a direction traversing the triangles, as a cavity shape is shown in Fig. 20, where the edges c of the openings of the C shape in cross

section are set thicker than the other parts, the molten metal inlets 26a are formed at the edges c of the openings of the main arm sections A, and the molten metal outlets 26b are formed at edges c' of the openings of the reinforcing arm sections B. Thus, sectional areas of parts corresponding to the molten metal inlets and outlets of the cavities are increased, and it is possible to make the flow of the molten metal smoother, and cutting and removing work of a pouring gate part formed after casting can be performed easily and surely.

Please delete the heading "Industrial Applicability" at page 19, line 12.

Please replace the paragraphs beginning on page 19, line 12 through page 21, line 15, which start with "According to the invention of claim 1" with the following rewritten paragraphs:

According to ~~the invention of claim 1~~ an embodiment of the present invention, the rear arm is obtained by weld-bonding the left and the right arm molded bodies made of an aluminum alloy die-cast in both the pivot sections and the cross member sections. Thus, reduction in weight can be realized, and higher rigidity can be secured compared with the conventional rear arm ~~described in the laid-open patent application~~ in which only the cross member section is weld-bonded.

In particular, the left and the right arm sections are formed in substantially a triangular shape ~~in side view~~ as viewed from the side, and the cross member sections are formed in a closed sectional shape extending from vertexes to bases of the triangular shapes. Therefore, since the arm sections of the triangular shape are further demarcated into two triangles by the cross member sections to form a truss structure, rigidity of the entire rear arm increases significantly.

~~According to the invention of claim 2, lengthwise~~ Lengthwise spaces between the front vertical walls and the rear vertical walls constituting the closed sectional shape of the cross member sections are minimized in intermediate parts in the vertical direction and are widened toward upper or lower parts thereof. Thus, rigidity of the entire rear arm can be further increased. In other words, in the rear arm, although compression and tension loads act on the vertexes and the bases of the triangular shapes due to a road surface load, since the cross member sections have large lengthwise distances on an upper side and a lower side in the closed sectional shapes, the rear arm can cope with the large load appropriately.

~~According to the invention of claim 3, one~~ One of the left and the right cross member sections is fit and inserted into the other of the left and the right cross member sections, and the fit and inserted part is welded. Thus, the bonding intensity can be increased compared with the case in which both the parts are simply brought into abutment against each other and welded.

~~According to the invention of claim 4, the~~ The left and the right boss sections are integrally formed on the opposed surfaces of the bottoms of the left and the right cross member sections and are brought into abutment against each other and weld-bonded, whereby the support boss section, to which the link member of the rear wheel suspension system is coupled, is formed. Thus, compared with the case in which a part to be a support boss section is welded to bottoms of the cross member sections as in the past, manufacturing is easy and sufficient rigidity can be secured.

~~According to the invention of claim 5, the~~ The left and the right arm sections have the main arm sections, which constitute the bases of the triangles, and the reinforcing arm sections, which constitute the hypotenuses of the triangles, and the reinforcing plates are bonded to the left and the right arm sections at least in parts at the rear of the cross member sections of the main arm sections so as to close the openings of a C shape in cross section. Thus, rigidity of the entire rear arm can be further increased by the reinforcing plates.

Please replace the paragraphs beginning on page 22, line 15 through page 23, line 12, which start with "According to the invention of claim 6" with the following rewritten paragraphs:

~~According to the invention of claim 6, the~~ The dampers consisting of an elastic member are intervened in a compressed state between the reinforcing ribs of the left and the right arm sections and the reinforcing plates. Thus, in particular, propagation of ~~vibration~~ vibrations due to chain driving or the like from the rear arm to the body can be controlled, and the occurrence of noise can be controlled.

In addition, the dampers are locked in the crossing section of the plural reinforcing ribs, which are formed on the sidewalls of a C shape so as to cross one another, and the dampers are pressed by the reinforcing plates. Thus, the dampers can be positioned surely, and it is possible to prevent the dampers from moving due to ~~vibration~~ vibrations or the like without providing a special positioning ~~means~~ device.

~~According to the invention of claim 7, in~~ In the case in which the left and the right arm molded bodies are die-cast, the die-cast molds having the plural molten metal inlets, which are arranged along the bases or the hypotenuses of the triangles of the left and the right arm sections, and the molten metal outlets, which are arranged so as to correspond to the molten metal inlets, are used to supply molten metal in a direction traversing the triangles. Thus, a distance the molten metal flows can be minimized, the molten metal flows smoothly because the passage areas of the molten metal inlets and the molten metal outlets can be increased, and a rear arm, which is relatively thin and has a complicated shape, can be cast surely.

~~According to the invention of claim 8, the~~ The edges of the openings of a C shape in cross section is set thicker than the other parts, the molten metal inlets are formed at the edges of the openings of the main arm sections constituting the bases, and the molten metal outlets are formed at edges of the openings of the reinforcing arm sections constituting the hypotenuses. Thus, sectional areas of parts corresponding to the molten metal inlets and outlets of the cavities formed of die-cast molds are increased, and it is possible to make the flow of the molten metal smooth, and the cutting and removing work of a pouring gate part formed by casting can be performed easily and surely.